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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	**Application No.** 10/680,734	**Applicant(s)** GOLDENBERG ET AL.
	Examiner Lynn Bristol	**Art Unit** 1643

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 May 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-107* is/are pending in the application.

4a) Of the above claim(s) *12-14 and 16-106* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11,15 and 107* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The amendments to the specification and drawings filed in the Preliminary Amendment of June 2, 2004 haven been considered and entered. The amendments to Claims 2-4, 11, 13, 18, 19, 27, 28, 34, 36, 38, 46, 47, 55, 56, 62, 64 and 92 and the addition of new Claim 107 filed in the Reply of May 2, 2006 have been considered and entered.

2. Claims 1-107 are all the pending claims for this application.

Election/Restrictions

3. Applicant's election with traverse of Group 1 (Claims 1-15 and 107) in the Reply filed on May 2, 2006 is acknowledged. The Examiner's response to Applicants' grounds for traversal follows the order set forth in the Reply.

a) Applicants argue that searching all of the groups would not be burdensome as a search for one group will reveal that prior art exists as to all other groups since the groups are interrelated by the claimed anti-carcinoembryonic (CEA) antibody or fragment thereof.

The Examiner's reasons for restriction in the Office Action of April 4, 2006 are incorporated in full. Applicants have not provided sufficient technical or legal arguments in response to the reasons for restriction. Additionally, as set forth below, numerous different classes of anti-CEA antibodies are known in the art, thus one skilled in the art would not interpret all anti-carcinoembryonic (CEA) antibodies as falling within the same class much less having shared characteristics, i.e., specificity, affinity, avidity, etc.

b) Applicants submit that because each of Groups II, IV-XI; Groups I and III; or Groups VIII-XI, respectively, are classified within the same class and subclass, that searching the claims in any of these Groups would not be burdensome.

This is not found persuasive because at least with respect to Applicants proposed grouping of the claims, no technical or legal arguments are presented as to why the claims should be grouped accordingly.

c) Applicants submit that there are allowable claims such as claims 1-9 and 15, thus the species restriction should be withdrawn.

This is not found persuasive because as set forth below, none of claims 1-9 and 15 is allowable.

d) The requirement is still deemed proper and is therefore made FINAL.

Claims 1-11, 15 and 107 are the claims under examination with species to a cytotoxic agent. Claims 12-14 are directed to a non-elected species and are withdrawn from further consideration.

Claim Objections

4. Claim 10 is objected to as being drawn to non-elected subject matter. The non-elected species for therapeutic agents are withdrawn from further consideration.

Specification

5. The abstract and specification are objected to for including the attorney docket no. of each of the pages. Each sheet of the specification shall contain no other information (see 37 CFR 1.171 (f)).

6. The specification is objected to for omitting to include the numerical amount(s) (unit(s)) of the reagents used in various formulations or dosages from [0244]-[0258]. This appears to be a typographical error, but in amending the specification, the Examiner requests that Applicant attempt to provide some evidentiary support for the original intended concentrations so as to avoid raising an issue of new matter.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1, 6, 8 and 107 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a) Claim 1 are indefinite for the recitation “anti-CEA” as the claims encompasses any molecule having this acronym. Amending the claim to insert –carcinoembryonic antigen – would bring the claim into compliance.

b) Claims 6 and 107 recite the limitation "said Class III anti-CEA antibody" in lines 7-8, respectively. There is insufficient antecedent basis for this limitation in the claims. The respective claims and the claims from which they depend recite "an anti-CEA antibody".

c) Claim 8 recites the limitation "said corresponding FR" in line 2. There is insufficient antecedent basis for this limitation in the claims. Claim 8 and the claims from which it depends do not recite a limitation for "a framework" so it is unclear as to what framework there should be any correspondence.

d) Claim 8 is indefinite for reciting that "said humanized MN-14 antibody or fragment thereof comprises at least one amino from said corresponding framework" as it is unclear 1) whether the amino acid from the framework of the murine MN-14 light or heavy chain variable should be inserted or substituted into the humanized antibody, and 2) where in the structure of the humanized antibody the insertion or substitution should occur.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1, 2, 4-6, 9-11, 15 and 107 are rejected under 35 U.S.C. 102(b) as being anticipated by Hansen et al. (USPN 5,874,540; published February 23, 1999; filed October 5, 1994; hereinafter referred to as "Hansen").

The claims are directed to compositions comprising Class I, Class II and Class III anti-CEA Mabs and cytotoxic agents; humanized, chimeric or fully human anti-CEA Mabs retaining substantially the binding affinity as the murine anti-CEA Mab; humanized or chimeric Mabs retaining the binding characteristics of the murine anti-CEA antibody; a Class III anti-CEA Mab reactive with CEA and unreactive with NCA and MA and where the Mab is a humanized or chimeric MN-14 antibody comprising CDR.sub.L1, has the amino acid sequence KASQDVGTSVA (SEQ. ID NO. 20); CDR.sub.L2 has the amino acid sequence WTSTRHT (SEQ. ID NO. 21); CDR.sub.L3 has the amino acid sequence QQYSLYRS (SEQ. ID NO. 22); CDR.sub.H1 has the amino acid sequence TYWMS (SEQ. ID. NO. 23); CDR.sub.H2 has the amino acid sequence EIHPDSSTI NYAPS LKD (SEQ. ID NO. 24); and, CDR.sub.H3 has the amino acid sequence LYFGF PWFAY (SEQ. ID NO. 25); compositions containing antibody fragments; and compositions containing conjugated or unconjugated antibodies comprising cytotoxic agents such as doxorubicin.

Hansen discloses a humanized Class III anti-CEA mAb in which the CDRs of a murine Class III anti-CEA mAb (MN14) are functionally engrafted to the amino acid sequence of a human antibody or antibody fragment to provide an immunological reagent with the anti-CEA binding properties of the murine Class III, anti-CEA mAb (see specification in general; Col. 2, lines 3-9; Figures 3 and 4; Example 8). A chimeric Class III anti-CEA mAb is also disclosed where the VH and VL regions from the murine Class III anti-CEA mAb (MN14) are functionally engrafted to the amino acid sequence of a human antibody or antibody fragment (Figures 3 and 4). The MN-14 Mab meets all of the criteria of a Class III, anti-CEA monoclonal antibody, being unreactive with meconium antigen (MA) by EIA and not reacting with normal tissues (i.e., unreactive with normal cross-reactive antigen (NCA)) (Col. 5, lines 61-67).

The humanized and chimeric Class III anti-CEA mAb are disclosed as having the following CDRs: CDR.sub.L1, has the amino acid sequence KASQDVGTSVA (SEQ. ID NO. 20); CDR.sub.L2 has the amino acid sequence WTSTRHT (SEQ. ID NO. 21); CDR.sub.L3 has the amino acid sequence QQYSLYRS (SEQ. ID NO. 22); CDR.sub.H1 has the amino acid sequence TYWMS (SEQ. ID. NO. 23); CDR.sub.H2 has the amino acid sequence EIHPDSSTI NYAPS LKD (SEQ. ID NO. 24); and, CDR.sub.H3 has the amino acid sequence LYFGF PWFAY (SEQ. ID NO. 25); Hansen discloses antibody fragments at Col. 1, lines 52-54; and compositions comprising the antibodies conjugated to any of a variety of known therapeutic agents (i.e., cytotoxic agents) such as doxorubicin (Col. 10, lines 14-19). Applicant is reminded that because the claims recite "comprising" language, any composition comprising an anti-CEA antibody and a therapeutic agent whether conjugated or unconjugated is encompassed within the scope, and are thus anticipated by Hansen.

Claim Rejections - 35 USC § 103

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.

3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 1-3, 5, 9-11 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Primus et al. (USPN 4,818,709; published April 4, 1989; hereinafter referred to as "Primus") as evidenced by Hansen et al. (Cancer 71:3478-85 (1993); hereinafter referred to as "Hansen II") and in view of Carter et al. (US 20050222392; published October 6, 2005; filed April 9, 2002; hereinafter referred to as "Carter").

Claims 1, 2, 5, 9-11 and 15 are discussed supra. Claim 3 is directed to a composition comprising a monovalent Class I or Class II anti-CEA Mab reactive with granulocytes.

Primus discloses three classes of defined monospecific (monovalent) murine antibodies to defined epitopes of CEA, NCA and MA (Figure 1). The hybridoma clones of Class I (NP-1) recognize epitopes shared on all three antigens, class II mabs (NP-2 and NP-3) react with sites shared between CEA and MA while those in Class III (NP-4) bind only CEA (Col., 4, lines 47-57; Col. 13, line 53 to Col. 14, line 11; Table 5). Primis also discloses that the NP-1 mab of class I binds to granulocytes (neutrophils) (Col. 4, line 69 to Col. 5, line 5; Col. 10, lines 20-34); antibodies labeled with a toxin (Col. 18, lines 34-36); and antibody fragments (Col. 20, lines 27-37) such as F(ab)2 fragments (Col. 19, line 47). Primus does not specifically disclose a Class II anti-CEA Mab reactive with granulocytes. Primus does not disclose compositions comprising the antibodies and cytotoxic agents such as vincristine, doxorubicin, DTIC or cyclophophosphamide.

As evidenced by Hansen II, the Class II anti-CEA Mab, NP-2, of Primus is reactive with granulocytes when cell/tissue samples are fixed and stained under certain conditions. See Table 3 where Hansen II shows the granulocyte reactive properties of Primus' NP-2 Mab against the other Class II Mabs, MN-2 and MN-3.

Carter discloses compositions having a therapeutic effect in eliminating tumour cells or arresting tumour growth comprising anti-idiotypic CEA antibodies that recognise the binding site of anti-tumour antibodies and which act as functional mimics of the antigen, adjuvant or pharmaceutically acceptable carriers [0037; 0051]. The compositions may also be "administered alone in a monotherapy or in combination with other pharmaceutically effective drugs. Such drugs may include immunotherapeutic agents or chemotherapeutic agents, which contain cytotoxic effective radiolabeled isotopes, or other cytotoxic agents including dacarbazine (DTIC), cyclophosphamide, doxorubicin (adriamycin) or vincristine [0106]. The antibodies and pharmaceutical compositions are disclosed for use in treating CEA-associated tumours [0108].

It would have been prima facie obvious at the time of the invention to have produced compositions comprising class I, class II or class III anti-CEA monoclonal antibodies and fragments thereof, and cytotoxic therapeutic agents such as dacarbazine (DTIC), cyclophosphamide, doxorubicin (adriamycin) or vincristine in view of Primus (as evidenced by Hansen II) and Carter.

One of ordinary skill in the art at the time of the invention would have been motivated to and had a reasonable expectation of success at the time the invention was made to have produced the instant claimed composition in view of Primus (as evidenced by Hansen II) and Carter for the following reasons. Primus discloses that "monoclonals against epitopes on CEA-family antigens are preferred reagents for cancer immunotherapeutic procedures involving single antibodies [monovalent] or combinations of antibodies and antibodies labeled with therapeutic doses of radioisotopes, drugs, toxins, or similar toxic agents" (Col. 4, lines 27-32), and as evidenced by Hansen II, the Mabs' of Primus are Class I (NP-1), Class II (NP-2 and NP-3) and Class III (NP-4) anti-CEA Mabs, with both Class I and II Mabs having the property of binding to granulocytes, and Class III Mabs reacting with CEA and being unreactive with NCA or MA. Carter discloses formulations comprising antibodies or fragments thereof and the cytotoxic agents discussed above for therapeutic treatment of humans CEA-expressing tumors. Applicant is reminded that because the claims recite "comprising" language, any composition comprising an anti-CEA antibody and a therapeutic agent whether conjugated or unconjugated is encompassed within the scope. Thus, because at the time of the invention, all of the reagents were readily available and the technology existed to conjugate antibodies with cytotoxic therapeutic agents or to formulate antibodies into mixtures with cytotoxic agents, one skilled in the art could have readily modified the anti-CEA antibodies in the compositions of Primus either by conjugating them to or combining them with cytotoxic agents disclosed by Carter, in order to obtain the instant claimed compositions. Thus, the claims were prima facie obvious at the time of the invention in view of Primus, Hansen II and Carter.

10. Claims 1 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Primus et al. (USPN 4,818,709; published April 4, 1989; hereinafter referred to as "Primus") in view of Carter et al. (US 20050222392; published October 6, 2005; filed April 9, 2002; hereinafter referred to as "Carter") and Queen et al. (5,530,101; published June 25, 1996; filed December 19, 1990; hereinafter referred to as "Queen").

See the interpretation of Claims 1 and 4, supra.

See the interpretation of Primus and Carter discussed supra.

Primus does not disclose compositions comprising a humanized or chimeric Mab or that these Mabs would retain substantially anti-CEA antibody binding specificity of murine anti-CEA Mab.

Queen discloses methods for producing humanized antibodies by introducing CDRs from a donor sequence into the human acceptor sequence. Queen discloses the advantages of humanized antibodies being non-immunogenic in humans yet easily and economically produced in a manner suitable for therapeutic formulation (Col. 2, lines 9-31, see especially Col. 16, lines 6-26). Queen discloses that "When combined into an intact antibody, the humanized light and heavy chains of the present invention will be substantially non-immunogenic in humans and retain substantially the same affinity as the donor immunoglobulin to the antigen (such as a protein or other compound containing an epitope). These affinity levels can vary from about 10.sup.8 M.sup.-1 or higher, and may be within about 4 fold, preferably within about 2 fold of the donor immunoglobulin. Ideally, the humanized antibodies will exhibit affinity levels at least about 60 to 90% of the donor immunoglobulin's original affinity to the antigen." (col. 3, lines 33-42). Queen discloses "chimeric antibodies whose light and heavy chain genes have been constructed, typically by genetic engineering, from immunoglobulin variable and constant region genes belonging to different species. For example, the variable segments of the genes from a mouse monoclonal antibody may be joined to human constant segments, such as gamma 1 and gamma 3." (Col. 11, lines 53-65)

It would have been prima facie obvious to produce compositions comprising humanized and chimeric anti-CEA Mabs and Mab fragments in view of Primus, Carter and Queen.

One of ordinary skill in the art would have been motivated to and had a reasonable expectation of success at the time the invention was made to have produced the instant claimed compositions in view of Primus, Carter and Queen, since Primus discloses that "monoclonals against epitopes on CEA-family antigens are preferred reagents for cancer immunotherapeutic procedures involving single antibodies [monovalent] or combinations of antibodies and antibodies labeled with therapeutic doses of radioisotopes, drugs, toxins, or similar toxic agents" (Col. 4, lines 27-32), Queen discloses chimeric antibodies and the improvements of humanization of antibodies routinely done for antibody immunotherapy in humans, by inserting donor CDRs into human immunoglobulin frameworks (Col. 13, lines 6-29), and Carter discloses formulations comprising antibodies or fragments thereof and the cytotoxic agents discussed supra for therapeutic treatment of humans CEA-expressing tumors.

At the time of the invention, all of the reagents were readily available and the technology existed to prepare chimeric and humanized antibodies, and to conjugate antibodies with cytotoxic therapeutic agents or to formulate antibodies into mixtures with cytotoxic agents. Thus one skilled in the art could have readily modified the anti-CEA antibodies in the compositions of Primus either by producing chimeric or humanized anti-CEA antibodies having substantially similar binding properties to the murine anti-CEA Mab according to Queen. The chimeric or humanized anti-CEA Mabs could have been further modified, by conjugating them to or combining them with cytotoxic agents disclosed by Carter, in order to obtain the instant claimed compositions. The claims were prima facie obvious at the time of the invention in view of Primus, Carter and Queen.

11. Claims 1 and 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hansen et al. (USPN 5,874,540; published February 23, 1999; filed October 5, 1994; hereinafter referred to as "Hansen") in view of Queen et al. (5,530,101; published June 25, 1996; filed December 19, 1990; hereinafter referred to as "Queen").

See the interpretation of Claims 1 and 6, supra. Claim 7 is directed a humanized MN-14 antibody having amino acid substitutions from the MN-14 antibody framework in the acceptor framework regions for the heavy and light chain variable regions. Because of the indefiniteness of Claim 8 as discussed supra, and for purposes of examination, Claim 8 is read in light of Claim 7.

See the interpretation of Hansen as discussed supra. Hansen does not disclose a humanized or chimeric MN-14 antibody comprising amino acids from the MN-14 antibody framework in the acceptor framework region.

Queen discloses humanized antibodies where the heavy and light chains may each be designed by using any one or all three of the position criteria as follows:

> "further optional substitutions of a human framework amino acid of the acceptor immunoglobulin with the corresponding amino acid from a donor immunoglobulin will be made at positions which fall in one or more of the following categories:
>
> (2) the amino acid in the human framework region of the acceptor immunoglobulin is rare for that position and the corresponding amino acid in the donor immunoglobulin is common for that position in human immunoglobulin sequences; or
>
> (3) the amino acid is immediately adjacent to one of the CDR's; or
>
> (4) the amino acid is predicted to be within about 3 .ANG. of the CDR's in a three-dimensional immunoglobulin model and capable of interacting with the antigen or with the CDR's of the donor or humanized immunoglobulin." (Col. 3 lines 2-18)

Queen also teaches:

> "that two contributing causes of the loss of affinity in prior means of producing humanized antibodies (using as examples mouse antibodies as the source of CDR's) are:
>
> (1) When the mouse CDR's are combined with the human framework, the amino acids in the framework close to the CDR's become human instead of mouse. Without intending to be bound by theory, we believe that these changed amino acids may slightly distort the CDR's, because they create different electrostatic or hydrophobic forces than in the donor mouse antibody, and the distorted CDR's may not make as effective contacts with the antigen as the CDR's did in the donor antibody;
>
> (2) Also, amino acids in the original mouse antibody that are close to, but not part of, the CDR's (i.e., still part of the framework), may make contacts with the antigen that contribute to affinity. These amino acids are lost when the antibody is humanized, because all framework amino acids are made human." (Col. 12, lines 46-65)

To avoid these problems, and to produce humanized antibodies that have a very strong affinity for a desired antigen, Queen discloses using the position criteria as discussed above.

It would have been prima facie obvious to produce compositions comprising a humanized MN-14 antibody having amino acid substitutions from the MN-14 antibody framework in the acceptor framework regions for the heavy and light chain variable regions in view of Hansen and Queen.

One of ordinary skill in the art would have been motivated to and had a reasonable expectation of success at the time the invention was made to have produced the instant claimed compositions in view of Hansen and Queen, since Hansen discloses humanized and chimeric MN-14 mAb having the following CDRs: CDR.sub.L1, has the amino acid sequence KASQDVGTSVA (SEQ. ID NO. 20); CDR.sub.L2 has the amino acid sequence WTSTRHT (SEQ. ID NO. 21); CDR.sub.L3 has the amino acid sequence QQYSLYRS (SEQ. ID NO. 22); CDR.sub.H1 has the amino acid sequence TYWMS (SEQ. ID. NO. 23); CDR.sub.H2 has the amino acid sequence EIHPDSSTI NYAPS LKD (SEQ. ID NO. 24); and, CDR.sub.H3 has the amino acid sequence LYFGF PWFAY (SEQ. ID NO. 25); antibody fragments; and compositions comprising the antibodies conjugated to any of a variety of known therapeutic agents (i.e., cytotoxic agents) such as doxorubicin. Queen discloses the need to preserve the affinity of a humanized antibody to that of the donor CDRs.

At the time of the invention, all of the reagents were readily available and the technology existed to prepare chimeric and humanized antibodies with framework substitions, and to conjugate antibodies with cytotoxic therapeutic agents or to formulate antibodies into mixtures with cytotoxic agents. Thus one skilled in the art could have readily modified the humanized or chimeric MN-14 Mab in the compositions of Hansen by further substituting amino acids from the murine MN-14 framework into the acceptor framework according to Queen. The chimeric or humanized MN-14 Mabs could have been further modified, by conjugating them to or combining them with cytotoxic agents, in order to obtain the instant claimed compositions. The claims were prima facie obvious at the time of the invention in view of Hansen and Queen.

Conclusion

12. No claims are allowed.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lynn Bristol whose telephone number is 571-272-6883. The examiner can normally be reached on 8:00-4:00, Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Helms can be reached on 571-272-0832. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

LARRY R. HELMS, PH.D.
SUPERVISORY PATENT EXAMINER

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